

CLAIM 1. A conductor connection device for a downhole environment comprising:

a first section connectable to implements intended to be located farther downhole than said first section when said device is installed in a wellbore;

5 at least one first conductor associated with said first section;

a first connector in operable communication with said at least one first conductor, said first connector being maintained in a clean condition or being cleanable by operation of the connection device;

10 a second section connectable to implements intended to be located farther uphole than said second section when said device is installed in a wellbore;

at least one second conductor associated with said second section;

a second connector in operable communication with said at least one second conductor, said second connector being maintained in a clean condition or being cleanable by operation of the connection device, said second connector being
15 connectable to said first connector by operation of said connection device.

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CLAIM 2. A conductor connection device as claimed in claim 1 wherein said connection device further comprises:

a third section connectable to said second section prior to being run downhole to substitute for functions of the second section related to the second connector and
5 releasable from said second section after connection with said first section;

at least one third conductor associated with said third section;

a third connector in operable communication with said at least one third conductor, said third conductor also being in operable communication with said at least one second conductor, said third conductor being maintained in a clean
10 condition or cleanable by operation of said connection device;

said third connector being connectable to said first connector by operation of said connection device;

a forth connector in operable communication with said at least one third conductor, said forth connector being maintained in a clean condition or being
15 cleanable by operation of a subsequently run connection device.

CLAIM 3. A conductor connection device as claimed in claim 1 wherein said first connector and said second connector each comprise:

at least one pad;

at least one fluid impermeable covering on each said at least one pad.

CLAIM 4. A conductor connection device as claimed in claim 3 wherein said connection device further includes at least one interconnector providing interconnection between said first connector pad and said second connector pad.

CLAIM 5. A conductor connection device as claimed in claim 4 wherein said interconnector is a conductive piercing member which pierces said at least one fluid impermeable covering on each said at least one pad upon operation of said connection device.

Sub A 7 CLAIM 6. A conductor connection device as claimed in claim 1 wherein said connection device is configured to provide a dielectric material to a vicinity of interconnection between said first connector and said second connector.

CLAIM 7. A conductor connection device as claimed in claim 5 wherein said covering is rubber.

CLAIM 8. A conductor connection device as claimed in claim 5 wherein said covering is metal.

CLAIM 9. A conductor connection device as claimed in claim 6 wherein said dielectric material is oil.

CLAIM 10. A conductor connection device as claimed in claim 6 wherein said dielectric material is grease.

Sub A 7 CLAIM 11. A conductor connection device as claimed in claim 1 wherein said first connector and said second connector are exposed to environmental conditions and are wiped clean during operation of the connection device.

CLAIM 12. A conductor connection device as claimed in claim 11 wherein said device is configured to provide a dielectric material to an interconnection vicinity of said connection device.

CLAIM 13. A conductor connection device as claimed in claim 12 wherein said dielectric material is oil.

CLAIM 14. A conductor connection device as claimed in claim 12 wherein said dielectric material is grease.

CLAIM 15. A conductor connection device as claimed in claim 12 wherein said dielectric material is dispensed from a reservoir in said device.

CLAIM 16. A conductor connection device as claimed in claim 11 wherein said first connector and said second connector are wiped clean by each other.

CLAIM 17. A conductor connection device as claimed in claim 11 wherein said first connector and said second connector are wiped clean by a wiper.

CLAIM 18. A conductor connection device as claimed in claim 15 wherein said reservoir includes a check valve.

Sub 17 CLAIM 19. A conductor connection device as claimed in claim 1 wherein said first connector is a pad and said second connector includes a meltable conductive element.

CLAIM 20. A conductor connection device as claimed in claim 19 wherein said element is meltable by a coil.

CLAIM 21. A conductor connection device as claimed in claim 20 wherein said coil is powered from within said device.

CLAIM 22. A conductor connection device as claimed in claim 20 wherein said coil is powered from external to said device.

CLAIM 23. A conductor connection device as claimed in claim 1 wherein said device is configured to provide a dielectric material to an area of interconnection of said first connector and said second connector.

CLAIM 24. A conductor connection device as claimed in claim 23 wherein said dielectric material is oil.

CLAIM 25. A conductor connection device as claimed in claim 23 wherein said dielectric material is grease.

CLAIM 26. A conductor connection device for a downhole environment comprising:

a first section connectable to implements intended to be located farther downhole than said first section when said device is installed in a wellbore;

at least one first conductor associated with said first section;

a first connector in operable communication with said at least one first conductor, said first connectors being maintained in a clean condition or being cleanable by operation of the connection device;

a second section connectable to implements intended to be located farther uphole than any said second section when said second section is installed in a wellbore;

at least one second conductor associated with said second section;

a third section operably connected to said second section ;

at least one third conductor associated with said third section, said at least one third conductor being operably connected to said at least one second conductor;

a third connector in operable communication with said at least one third conductor, said third connector being maintained in a clean condition or being cleanable by operation of the connection device, said third connector being connectable to said first connector by operating said connection device, said third section being separable from said second section after said connection device is operated;

a forth connector in operable communication with said at least one third conductor, said forth connector being maintained in a clean condition or being cleanable by operation of a subsequent connection device.

CLAIM 27. A conductor connection device as claimed in claim 26 wherein said third section further comprises a conductor break to prevent conductive contact of said at least one first conductor through said at least one third conductor with wellbore fluids upon separation of said third section from said second section.

CLAIM 28. A conductor connection device as claimed in claim 27 wherein said conductor break comprises at least two contacts maintained in a clean environment, said contacts being separable upon separation of said second section.

CLAIM 29. A conductor connection device as claimed in claim 28 wherein said clean environment is maintained by a deflectable cover to which one of said at least two contacts is connected, said deflectable cover being deflected to maintain connection of said at least two contacts while said third section is attached to said second section.

CLAIM 30. A conductor connection device as claimed in claim 27 wherein said conductor break comprises:

- at least one contact pin; and
- at least one contact receptacle.

CLAIM 31. A conductor connection device as claimed in claim 30 wherein said break further comprises a slide which seals said at least one receptacle when said at least one pin is not engaged in said at least one receptacle.

CLAIM 32. A conductor connection device as claimed in claim 31 wherein said break further includes an actuator pin to actuate said slide.

CLAIM 33. A conductor connection device as claimed in claim 26 wherein said first connector and said third connector each comprise:

- at least one pad;
- at least one fluid impermeable covering on each said at least one pad.

CLAIM 34. A conductor connection device as claimed in claim 33 wherein said connection device further includes at least one interconnector providing interconnection between said first connector pad and said third connector pad.

CLAIM 35. A conductor connection device as claimed in claim 34 wherein said interconnector is a conductive piercing member which pierces said at least one fluid impermeable covering on each said at least one pad upon operation of said connection device.

CLAIM 36. A conductor connection device as claimed in claim 26 wherein said connection device is configured to provide a dielectric material to a vicinity of interconnection between said first connector and said third connector.

CLAIM 37. A conductor connection device as claimed in claim 35 wherein said covering is rubber.

CLAIM 38. A conductor connection device as claimed in claim 35 wherein said covering is metal.

CLAIM 39. A conductor connection device as claimed in claim 36 wherein said dielectric material is oil.

CLAIM 40. A conductor connection device as claimed in claim 36 wherein said dielectric material is grease.

CLAIM 41. A conductor connection device as claimed in claim 26 wherein said first connector and said third connector are exposed to environmental conditions and are wiped clean during operation of the connection device.

CLAIM 42. A conductor connection device as claimed in claim 41 wherein said device is configured to provide a dielectric material to an interconnection vicinity of said connection device.

CLAIM 43. A conductor connection device as claimed in claim 42 wherein said dielectric material is oil.

CLAIM 44. A conductor connection device as claimed in claim 42 wherein said dielectric material is grease.

CLAIM 45. A conductor connection device as claimed in claim 42 wherein said dielectric material is dispensed from a reservoir in said device.

CLAIM 46. A conductor connection device as claimed in claim 41 wherein said first connector and said third connector are wiped clean by each other.

CLAIM 47. A conductor connection device as claimed in claim 41 wherein said first connector and said third connector are wiped clean by a wiper.

CLAIM 48. A conductor connection device as claimed in claim 45 wherein said reservoir includes a check valve.

CLAIM 49. A conductor connection device as claimed in claim 26 wherein said first connector is a pad and said third connector includes a meltable conductive element.

CLAIM 50. A conductor connection device as claimed in claim 49 wherein said element is meltable by a coil.

CLAIM 51. A conductor connection device as claimed in claim 50 wherein said coil is powered from within said device.

CLAIM 52. A conductor connection device as claimed in claim 50 wherein said coil is powered from external to said device

CLAIM 53. A conductor connection device as claimed in claim 26 wherein said device is configured to provide a dielectric material to an area of interconnection of said first connector and said third connector.

CLAIM 54. A conductor connection device as claimed in claim 53 wherein said dielectric material is oil.

CLAIM 55. A conductor connection device as claimed in claim 53 wherein said dielectric material is grease.

CLAIM 56. A downhole connection device comprising:
 at least two connectors on an uphole end of a connection interface;
 at least two complementary connectors on a downhole end of said connection interface; and
 a self orienting profile within said connection device.

CLAIM 57. A downhole conductor connection device comprising:
 a downhole portion including a lower conductor leading farther downhole and an orientation profile;
 an uphole portion having a conductor leading farther uphole and a complementary orientation profile;
 at least one lower seal adapter connected to said lower conductor; and
 at least one upper seal adapter connected to said upper conductor, said lower seal adapter being receivable in said upper seal adapter to connect said lower conductor to said upper conductor.

CLAIM 58. A downhole conductor connection device as claimed in claim 57 wherein said connection device fits in/snap out thread.

CLAIM 59. A downhole conductor connection device as claimed in claim 57 wherein said device further comprises a dog support system to lock said device in a selected position.

CLAIM 60. A downhole conductor connection device as claimed in claim 59 wherein said dog support system is collapsible upon pressuring a control line to shift a housing.

CLAIM 61. A method for downhole conductor connection comprising:
 running a downhole and an uphole connector portion in a sealed engaged condition;
 opening said sealed engaged connector;
 orientating said uphole connector with said downhole connector; and
 reengaging at least one conductor.

sub 52 CLAIM 62. A method for creating a conductive connection in a downhole environment comprising:
 installing a first section connectable to implements located farther downhole from an intended location of said first section, said first section having at least one conductor associated therewith and a connector operably connected to said at least one conductor, said conductor being maintained in a clean condition or being cleanable upon engagement of said first section with a second section;
 installing said second section connectable to implements located further uphole than an intended location of said second section, said second section having at least one conductor associated therewith and a connector operably connected to said at least one conductor, said conductor being maintained in a clean condition or being cleanable upon engagement of said first section with said second section, engaging said first section with said second section.

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CLAIM 63. A method for creating a conductive connection as claimed in claim 62 wherein said engaging includes forming a conductive connection between said first section and said second section.

CLAIM 64. A method for creating a conductive connection as claimed in claim 62 wherein said engaging causes self orientation of said first section and said second section.

CLAIM 65. A method for creating a conductive connection in a downhole environment while providing for disconnection and reconnection comprising:

installing a first section connectable to implements located farther downhole than an intended location of said first section, said first section having at least one conductor associated therewith and a connector operably connected to said at least one conductor;

installing a second section connectable to implements located farther uphole than an intended location of said second section, said second section having at least one conductor associated therewith, said second section further including a third section having at least one conductor associated therewith and a third connector operably connected at one end to said at least one conductor and a fourth connector operably connected at the other end of said at least one connector; and

engaging said third section and said first section

CLAIM 66. A method for creating a conductive connection as claimed in claim 65 further including:

disconnecting said second section from said third section; and

installing a separate second section and engaging said third section in position as connected to said first section.

CLAIM 67. A method for creating a conductive connection as claimed in claim 62 wherein said engaging includes flushing with a dielectric fluid, a connection area of interconnection between said first connector and said second connector.

CLAIM 68. A method for creating a conductive connection as claimed in claim 65 wherein said engaging includes flushing with a dielectric fluid, a connection area of interconnection between said first connector and said third connector.